

UNITED STATES DISTRICT COURT
DISTRICT OF MASSACHUSETTS

_____)	
SEAN McENROE,)	
)	
Plaintiff,)	
)	
v.)	Civil Action No. 14-cv-12320-LTS
)	
MANTISSA CORPORATION,)	
)	
Defendant.)	
_____)	

ORDER ON CROSS MOTIONS FOR SUMMARY JUDGMENT (DOC. NOS. 56, 62)

February 29, 2016

SOROKIN, J.

Plaintiff Sean McEnroe (“McEnroe”) brings this action against Defendant Mantissa Corporation (“Mantissa”) alleging that Mantissa infringed on the copyright McEnroe holds to a software program in violation of 17 U.S.C. §§ 101 *et seq.* Doc. No. 35. Both parties have now moved for summary judgment. Doc Nos. 56 (McEnroe’s motion), 62 (Mantissa’s motion). Both parties have opposed their counterparts’ motions, see Doc. Nos. 74 (Mantissa’s opposition to McEnroe’s motion), 82 (McEnroe’s opposition to Mantissa’s motion), and have replied to those oppositions. See Doc. Nos. 89 (McEnroe’s reply brief), 92 (Mantissa’s reply brief). For the reasons explained below, the Court **ALLOWS IN PART** and **DENIES IN PART** Mantissa’s motion. The Court **DENIES** McEnroe’s motion.

I. BACKGROUND

A. General Background

Mantissa provides tilt tray sorter systems to companies with large warehouses or distribution centers. Doc. No. 93 ¶¶ 1, 2. Mantissa describes a tilt tray sorter as:

a train of wheeled carriages that runs continuously around a loop of track. Chutes that resemble playground slides are placed on either side of the track. Items are “inducted” onto tiltable trays on top of the carriages using high speed conveyor belts. When the carriage approaches the chute where the item needs to be deposited, the tray tilts to slide the item down the chute to its destination (such as a storage, order, or shipping location). The items at the bottom of a particular chute are then palletized or placed in the appropriate carton or trailer. Id. ¶ 2.

The movement of a particular item through a warehouse is controlled by computer software programs. A distribution center employs a warehouse control system (“WCS”) to control each item’s progress from receiving, through inventory, then to shipping. Id. ¶ 1. The WCS communicates with the software that is the subject of this dispute, namely, the software that controls the tilt tray sorter system. Id.; Doc. No. 75 ¶ 3.

From 1990 to 1991, McEnroe authored the PACE Automated Tilt Tray Control Software (“PACE”). Doc. No. 75 ¶ 1. McEnroe custom wrote PACE to control Mantissa’s tilt tray sorters. Doc. No. 93 ¶ 5. From 1991 through 1998, Mantissa purchased the PACE software from Penguin Systems, Ltd. (“Penguin”) and hired Penguin to install PACE at various customer locations. Doc. No. 75 ¶ 10. At each new location where PACE was installed, McEnroe (or Penguin) would modify PACE to conform to the configuration of each warehouse and the particular needs of each customer. Id. ¶¶ 14-15. In addition, each customer’s WCS was modified to understand the PACE messaging language, described below. Doc. Nos. 75 ¶ 6, 93 ¶ 9. McEnroe (or Penguin) received a license fee of approximately \$25,000 per machine per installation. Doc. No. 75 ¶ 18.

B. The Copyright Process

In 1991, McEnroe applied for and received Copyright Registration No. TX0003189501 (the “1991 Copyright”) on the PACE Software. Doc. No. 60 ¶ 21. The 1991 Copyright bore the title “IOCP Driver.” Doc. No. 60-1 at 2. McEnroe deposited the source code, which he had saved

to floppy disks, with the United States Copyright Office (“USCO”) when he filed for the 1991 Copyright. Doc. No. 60 ¶ 22.

In 1998, Mantissa informed McEnroe that it had developed its own sorter control software and had stopped using PACE. Id. ¶ 18, 20. Since then, Mantissa has not compensated McEnroe. Id. ¶ 18. McEnroe ceased modifying the software upon Mantissa’s notice. Id. ¶ 19.¹

In December 2012, McEnroe learned that Mantissa had not independently developed its sorter control software. Id. ¶ 20. A Mantissa newsletter indicated that it had “replicated the functionality” of PACE. Doc. 35-1 at 21. On December 22, 2012, McEnroe’s attorney sent a letter of inquiry to Mantissa regarding what Mantissa meant by its contention that it “replicated” PACE’s functionality. Id.² Mantissa responded in a letter dated April 26, 2013, stating that the PACE software “was in no way consulted, much less copied, replicated, or adopted,” and that to have done so would have been “wrong” and “unethical.” Doc. No. 35-1 at 22.

In 2013, when McEnroe attempted to retrieve a copy of the deposit for the 1991 Copyright from the USCO, the USCO informed him that the deposit had been destroyed. Doc. No. 60 ¶ 27. Then, when McEnroe attempted to retrieve his copy of the 1991 source code from the floppy disks, he discovered that, because the floppy disks had degraded over the intervening 22 years, he could not retrieve the source code. Id. ¶ 28.

On February 19, 2014, McEnroe filed for copyright registration for the PACE software as a derivative work of the 1991 Copyright. Id. ¶ 29. McEnroe received Copyright Registration TX

¹ Mantissa disputes this, asserting that “[m]ultiple documents produced by McEnroe indicate that he modified the PACE software source code in 1999,” and that it “is aware of no credible evidence to indicate that the modifications stopped in 1999.” Doc. No. 75 ¶ 21 (Defendant’s Response).

² McEnroe characterizes this letter as a notice of infringement, Doc. No. 60 ¶ 24, but the letter itself reveals this as a mischaracterization.

7-800-102 (the “2014 Copyright”) from the USCO for the derivative work. Id. ¶ 30. He deposited the 2014 Copyright with the USCO. Id. ¶ 31. The 2014 Copyright allegedly contains both the original 1991 Copyright and modifications McEnroe made to PACE between 1991 and 1998, a point on which the parties disagree. Doc No. 75 ¶ 32.

C. The Allegedly Infringing Programs

McEnroe alleges that two Mantissa software programs, called Destination and Merlin (collectively, “the Mantissa software”), infringed on his 1991 and 2014 Copyrights (collectively, the “copyright”). Doc. No. 93 ¶ 10; see Doc. No. 35 at 8-9. Mantissa describes Destination as “the main control software that operates motors, relays, and sensors on the sorter in ‘real time.’” Doc. No. 93 ¶ 10. Destination uses “Think & Do, a graphical programming language for industrial automation and control, and runs on its own computer, which is attached to the sorter. Think & Do uses graphical flow chart programming instead of textual code, such as C code.” Id. Additionally, Destination “contains code written in Microsoft Visual Basic. The Visual Basic language uses a different conceptual model than the C language, and the exact same program written in Visual Basic would appear differently than one written in C.” Id. Merlin “acts as a switchboard for forwarding messages between Destination, the WCS, and other devices . . . attached to the system.” Id. ¶ 11. The computer on which Merlin is run connects to both the Destination computer and the WCS network. Id. Unlike Destination, Merlin is written in C, the same computer language used by McEnroe to write PACE. Doc. No. 75 ¶ 50.

The parties’ dispute focuses on the messaging language used by PACE. PACE transmits messages to the tilt tray sorter system that are each 128 bytes long, meaning that each message contains 128 digits or characters. Doc. Nos. 75 ¶ 36, 93 ¶ 7. Each 128-byte message can be broken down into various fields, beginning with a four-byte field called “msg_len” denoting the message

length to be “0128,” or 128 bytes. Doc. No. 67-1 ¶¶ 44-45. Next is a four-byte field called “action_code” corresponding to an “action code,” or command, to the sorter system, such as SCIN for “scanner input,” TIPR for “tip request,” TIPV for “tip verify,” LITE for “light,” and CHTO for “chute open.” Doc. No. 93 ¶ 7. The version of PACE dating from 2014 contains 29 action codes. Id.

After the action code, each PACE message contains a number of other fields of fixed lengths ranging from one to 48 bytes. Doc. No. 93 ¶ 8. The field names employed by PACE bear the following names: msg_id, induct_area, port, barcode, weight, tray, chute, chute_actual, divert_arm, light, button, return_code, filler and rec_id. Doc. Nos. 67-2 ¶ 33. The fields within each PACE message always appear in the same order. Doc. No. 75 ¶ 37.

McEnroe alleges five similarities between the Mantissa software and PACE. Doc. No. 93 ¶ 12. First, the Mantissa software incorporates the 128-byte message length used by PACE. Id. ¶ 13. The second similarity concerns the data fields into which each PACE message is divided. Id. ¶ 14. The Mantissa software employs field names that are similar to those in PACE and the order in which the field names appear within the message is the same. Id.; see Doc. Nos. 67-1 ¶ 14, 67-2 ¶ 33. Third, both the Mantissa software and PACE use the four number combination of “0128” as the message length field, the first data field in every message. Doc. No. 93 ¶ 15. Fourth, the Mantissa software uses the same four-letter action codes corresponding to the commands sent to the tilt tray sorter system. Id. ¶ 17. While these four similarities all pertain to PACE’s messaging language, the fifth similarity is characterized as a similarity in logic and organization. Doc. No. 67-1 ¶ 18. Specifically, a Destination program file contains a flowchart named “PACE deadman pulses,” a phrase used in PACE. Doc. No. 93 ¶ 20; 67-1 ¶¶ 77, 82.

II. LEGAL STANDARD

Summary judgment is appropriate when “the movant shows that there is no genuine dispute as to any material fact and the movant is entitled to judgment as a matter of law.” Fed. R. Civ. P. 56(a). Once a party “has properly supported its motion for summary judgment, the burden shifts to the non-moving party, who ‘may not rest on mere allegations or denials of [its] pleading, but must set forth specific facts showing there is a genuine issue for trial.’” Barbour v. Dynamics Research Corp., 63 F.3d 32, 37 (1st Cir. 1995) (quoting Anderson v. Liberty Lobby, Inc., 477 U.S. 242, 256 (1986)). The Court is “obliged to review the record in the light most favorable to the nonmoving party, and to draw all reasonable inferences in the nonmoving party’s favor.” LeBlanc v. Great Am. Ins. Co., 6 F.3d 836, 841 (1st Cir. 1993). Even so, the Court is to ignore “conclusory allegations, improbable inferences, and unsupported speculation.” Prescott v. Higgins, 538 F.3d 32, 39 (1st Cir. 2008) (quoting Medina–Muñoz v. R.J. Reynolds Tobacco Co., 896 F.2d 5, 8 (1st Cir. 1990)). A court may enter summary judgment “against a party who fails to make a showing sufficient to establish the existence of an element essential to that party’s case, and on which that party will bear the burden of proof at trial.” Celotex Corp. v. Catrett, 477 U.S. 317, 322 (1986). “Cross-motions for summary judgment do not alter the basic Rule 56 standard, but rather simply require [the Court] to determine whether either of the parties deserves judgment as a matter of law on facts that are not disputed.” Adria Int’l Grp., Inc. v. Ferré Dev., Inc., 241 F.3d 103, 107 (1st Cir. 2001).

III. DISCUSSION

A. Analytic Framework

To prevail on his copyright infringement claim, McEnroe must prove two elements: “(1) ownership of a valid copyright, and (2) copying of constituent elements of the work that are

original.” Feist Publ’ns, Inc. v. Rural Tel. Serv. Co., 499 U.S. 340, 361 (1991). “To show ownership of a valid copyright, a plaintiff bears the burden of proving that the work, when viewed as a whole, is original and that he has complied with the requisite statutory formalities.” Saenger Org., Inc. v. Nationwide Ins. Licensing Assocs., Inc., 119 F.3d 55, 59 (1st Cir. 1997). “In judicial proceedings, a certificate of copyright registration constitutes *prima facie* evidence of copyrightability and shifts the burden to the defendant to demonstrate why the copyright is not valid.” Id. (quoting Lotus Dev. Corp. v. Borland Int’l, Inc., 49 F.3d 807, 813 (1st Cir. 1995)).

To show the requisite copying, Feist’s second prong, McEnroe must demonstrate that Mantissa “copied [his] copyrighted work as a factual matter.” Lotus, 49 F.3d at 813. McEnroe can demonstrate this via either “direct evidence of factual copying or, if that is unavailable, evidence that [Mantissa] had access to the copyrighted work and that the offending and copyrighted works are so similar that the court may infer that there was factual copying (i.e., probative similarity).” Id. McEnroe “must then prove that the copying of copyrighted material was so extensive that it rendered the offending and copyrighted works substantially similar.” Id. Mantissa presents a variety of arguments, across the entire spectrum of copyright analysis, as to why McEnroe cannot prevail. The Court addresses each of them in turn.

B. Proof of the 1991 Copyright

Feist’s first prong requires McEnroe to show that he owns a valid copyright to the PACE software. McEnroe’s certificate of copyright registration constitutes *prima facie* evidence of copyrightability and shifts the burden to Mantissa to demonstrate why the 1991 Copyright is not valid. Lotus, 49 F.3d at 813. Mantissa contends that McEnroe cannot prevail on his claim for infringement of the 1991 Copyright as, due to both the USCO losing the original deposit and the degradation of McEnroe’s floppy disks, it “is impossible to prove because there is no evidence

regarding what it covers.” Doc. No. 74 at 12. Generally speaking, “[a]n original writing . . . is required in order to prove its content.” Fed. R. Evid. 1002. This requirement is known as the “Best Evidence Rule,” and it typically applies in copyright infringement cases. See Airframe Sys. V. L-3 Commc’ns Corp., 658 F.3d 100, 107 n.9 (1st Cir. 2011). Failure to adduce admissible evidence of the original copyright regularly leads to dismissal of copyright actions. See id.; see also Unistrut Corp. v. Power, 280 F.2d 18, 23 (1st Cir. 1960) (dismissing copyright infringement claim “for want of proof” that “infringed material was contained in the” relevant copyright deposit).

To overcome this general backdrop, McEnroe asserts that Federal Rule of Evidence 1004 allows him to “prove copying of constituent elements of the 1991 Copyright, absent the deposit.” Doc. No. 89 at 6. Under that Rule, a party may prove the contents of a writing by means other than an original or duplicate if, *inter alia*, “all originals have been lost or destroyed (absent bad faith by the proponent).” Airframe, 658 F.3d at 107 n.9 (citing Fed. R. Evid. 1004(a)). In Airframe, the First Circuit dismissed the plaintiff’s infringement claim because of “insufficient evidence to create a genuine issue of material fact regarding the necessary element of substantial similarity.” Id. at 107-08. The only evidence the plaintiff had was a declaration comparing the allegedly infringing work to an updated version of the plaintiff’s copyrighted material, id. at 107, an effort which did not satisfy the Best Evidence Rule. Id. at 107 n.9. However, the First Circuit did note—albeit in *dicta*—that “if the Best Evidence Rule is satisfied, evidence other than the original may be sufficient to establish the content of a copyrighted work.” Id.

This First Circuit’s guidance, which flows naturally from Rule 1004, demonstrates that McEnroe requires neither the original copy of the 1991 Copyright nor a duplicate of the same. He has produced evidence of the original’s unavailability through no fault of his own. The parties

stipulate that the USCO destroyed the 1991 deposit, and that the duplicate copy of the source code McEnroe had saved on his floppy disks had degraded, rendering the code incapable of retrieval. Doc. No. 75 ¶¶ 26, 27. Viewing these facts in McEnroe's favor, a reasonable jury could infer that McEnroe bears no responsibility for either of these occurrences. Such an inference places him in Rule 1004's orbit.

Because McEnroe may prove the contents of the 1991 Copyright through secondary evidence, such as his own testimony, his affidavit suffices, at summary judgment, to prove its contents. If the jury were to find McEnroe credible, it could then evaluate the congruence between Mantissa's software and his description of the 1991 Copyright, and determine if that overlap is enough for substantial similarity. While McEnroe can use secondary evidence to prove the 1991 Copyright's content, however, there is a genuine dispute of material fact as to that content. For example, a rational jury could find McEnroe's chronicling of the 1991 Copyright self-serving, and thus find that he failed to prove the existence of a valid copyright. For this reason, the Court cannot grant McEnroe's motion for summary judgment as to the validity of the 1991 Copyright.³

C. Validity of 2014 Copyright

McEnroe also proffers his certificate of registration for the 2014 Copyright as *prima facie* evidence of his ownership of a copyright to PACE. Mantissa disputes the validity of the 2014 Copyright on several grounds. First, Mantissa points out that the 2014 Copyright is not entitled to a presumption of validity because McEnroe filed it more than five years after the asserted

³ While McEnroe argues that he is entitled to summary judgment with respect to the issue of his ownership of a valid copyright and its contents, Doc. No. 65 at 13-14, Mantissa's brief in support of its motion for summary judgment focuses instead on the issues of method of operation, copyrightability, and substantial similarity. Doc. No. 64 at 3-4. Thus, only McEnroe sought summary judgment with respect to the issue of copyright ownership, and, consequently, the Court's holding is similarly circumscribed.

publication date of March 1998. Doc. No. 74 at 12. Second, Mantissa argues that the deposit accompanying the 2014 registration is an improper reconstruction of a “generic” copy of PACE. Id. at 12-13. Third, echoing its argument with respect to the 1991 Copyright, Mantissa asserts that, without proof of the content of the 1991 Copyright, McEnroe cannot show the extent of derivative contribution and the incorporation of the original work. Id. at 13-14.

Turning first to any presumption to be accorded to the 2014 Copyright registration, “[t]he evidentiary weight to be accorded the certificate of a registration made [more than five years after first publication of the work] shall be within the discretion of the court.” 17 U.S.C. § 410(c). Even if the Court were to recognize a presumption of validity of the 2014 Copyright, however, McEnroe still must demonstrate its contents in order to prove infringement. Without proof as to the content encompassed by a copyright, it is impossible to assess whether the allegedly infringed work and the accused work are substantially similar under Feist’s second prong. Airframe, 658 F.3d at 106 (stating that before a comparison of two works for substantial similarity can occur, “the plaintiff must necessarily establish the content of the copyrighted work that it contends was infringed”). Consequently, the Court need not decide at this juncture how much presumptive weight to accord to McEnroe’s certificate of registration.

Mantissa next takes issue with the 2014 deposit as an improper reconstruction of PACE, noting that the computer files comprising the 2014 deposit are all dated more than a month after the claimed publication date. Doc. No. 74 at 5. Also, a modification to one of the computer files appears to have been made after the claimed publication date. Id. at 5-6. And Mantissa asserts that the file names included in the 2014 deposit do not indicate that that version was ever published. Doc. No. 76 ¶ 10.

The question of whether the 2014 deposit supporting the registration was ever published and when are disputed questions of material fact, and, therefore, McEnroe is not entitled to summary judgment on the issue of copyright validity. As McEnroe asserts, there is record evidence indicating that the relevant source code files all exhibit modification dates prior to (not after) the claimed publication date. Doc. No. 91 ¶ 5. Also, stripping out files other than source code files reveals similarity between the 2014 files names and those dating from 1991. Id. ¶ 9. McEnroe additionally argues that the file modification made after the asserted publication date was minimal, accidental, and unrelated to the PACE messaging language at issue. Id. ¶ 10; see Data General v. Grumman Systems Support Corp., 36 F.3d 1147, 1161 (1st Cir. 1994), abrogated on other grounds, Reed v. Elsevier v. Muchnick, 559 U.S. 154 (2010), (“It is well established that immaterial, inadvertent errors in application for copyright registration do not jeopardize the validity of the registration”). Finally, McEnroe explains that a group of computer files would not all exhibit the same revision date, or publication date, because “[s]oftware grows as a collection of files, each edited over time as necessary,” and “[t]he copyright deposit reflects the state of the entire source code” on the publication date. Doc. No. 91 ¶ 3.

Finally, as to Mantissa’s argument that McEnroe has not demonstrated that the 2014 Copyright is derivative of the 1991 work, McEnroe’s ability to establish the derivative nature of the 2014 Copyright is tied to his evidentiary burden with respect to the 1991 Copyright, the original work. The factual issues applicable to the 1991 Copyright, discussed above, also undergird the issue of validity of the 2014 Copyright as a derivative work. Resolution of the latter thus depends on resolution of the former.

Because the parties dispute the content of the 2014 Copyright, McEnroe is not entitled to summary judgment on the question of its validity under Feist’s first prong.

D. Method of Operation

Assuming McEnroe clears the hurdle of demonstrating the content he claims is protected by the 1991 Copyright, either through secondary evidence or by way of the 2014 Copyright, the next issue is whether the claimed content is a method of operation. Computer programs are afforded copyright protection as literary works, 17 U.S.C. § 102(a), but copyright protection does not extend to methods of operation. 17 U.S.C. § 102(b) (“In no case does copyright protection for an original work of authorship extend to any idea, procedure, process, system, method of operation, concept, principle, or discovery, regardless of the form in which it is described, explained, illustrated, or embodied in such work.”). Mantissa argues that the PACE messaging language is an uncopyrightable method of operation. Doc. No. 64 at 11-16, 74 at 14-16. Mantissa’s contention relies on Lotus Dev. Corp. v. Borland Int’l, Inc., 49 F.3d 807 (1st Cir. 1995). Lotus claimed that Borland copied the menu hierarchy used in the Lotus 1-2-3 spreadsheet program into Borland’s Quattro and Quattro Pro spreadsheet programs. Id. at 809. The menu command hierarchy included more than 50 menus and submenus, covering 469 commands, including “copy,” “print,” and “quit.” Id. The First Circuit concluded that the menu command hierarchy was a method of operation and, thus, foreclosed from copyright protection. Id. at 815. The Court defined a “method of operation” as “the means by which a person operates something, whether it be a car, a food processor, or a computer.” Id. Applying this definition, the Court reasoned that the menu command hierarchy “provide[d] the means by which users control and operate Lotus 1-2-3.” Id. In other words, users had to use the menu command hierarchy “to tell the computer what to do.” Id. Without it, users “would not be able to access and control, or indeed make use of, Lotus 1-2-3’s functional capabilities.” Id. Similarly, according to Mantissa, without the PACE messaging language, users cannot use Mantissa’s sorters’ functional capabilities because the only way to

operate the sorter system is for PACE messages to “activate[] the proper motors, sensors, and switches to move the tilt trays and the carriages.” Doc. No. 64 at 13-14.

The Court concludes that the PACE messaging language is not a method of operation. One key difference between the case at bar and Lotus is that Borland did not copy any of Lotus’s underlying computer code. Lotus, 49 F.3d at 810. Instead, Borland “copied only the words and structure of Lotus’s menu command hierarchy.” The Court specifically noted that Lotus’s menu command hierarchy was distinct from the underlying source code. Id. at 816. In contrast, the dispute in this case centers on Mantissa’s copying of discrete elements of the PACE source code.⁴

While the specific source code used by Lotus was not necessary in order for users to operate Borland’s spreadsheet in the same way they operated Lotus 1-2-3, the disputed menu command hierarchy was required for users to employ both programs in substantially the same way, a factor the First Circuit found to be indicative of a method of operation. Id. “If specific words are essential to operating something, then they are part of a ‘method of operation’ and, as such, are unprotectable.” Id. Mantissa argues that the PACE messages are the “specific words . . . essential to operating” its sorters. Doc. No. 64 at 14. The problem with this logic is that all computer code is comprised of words required to achieve a specific function. “The computer program is a *means* for causing something to happen; it has a mechanical utility, an instrumental role, in accomplishing the world’s work.” Lotus, 49 F.3d at 819 (Boudin, J., concurring) (emphasis in original). If PACE had employed a menu command structure that allowed users to choose a function essential to the operation of the sortation system, such as “chute” or “tip request,” then this case would be within

⁴ Even though Destination was written in a different computer language, record evidence shows that Destination copied certain elements of the PACE source code containing the message language, including the field names and order, the length of each message and the action codes. Doc. No. 67-1 ¶ 55.

the ambit of Lotus and the basic menu commands such as “print” and “save” that it addressed. But the PACE messaging language is analogous to the source code that executed the commands selected by users via the menu command hierarchy at issue in Lotus, not the menu command hierarchy itself. Moreover, Mantissa did not need to copy PACE’s messaging language to operate its sorters. Mantissa does not dispute that there were numerous ways to program software to control the sorters, a fact that indicates that the PACE messaging language was not essential to operating the sorters. Doc. No. 64 at 14; see Oracle Am., Inc. v. Google Inc., 750 F.3d 1339, 1365 (Fed. Cir. 2014). Put another way, Mantissa could have achieved the same functionality without copying the PACE messaging language.⁵ See Oracle, 750 F.3d at 1368.

The example used by the Lotus Court is instructive. The Court compared Lotus’s command menu hierarchy to the buttons used to control a VCR, noting that choosing the “print” command from the menu hierarchy was akin to pressing the “play” button on a VCR. Lotus, 49 F.3d at 817. The Lotus Court explained that, just as the arrangement of buttons on a VCR is not copyrightable because the buttons themselves are a method of operation, “the ‘buttons’ of a computer program are also an uncopyrightable ‘method of operation.’” Id. The PACE messaging language, however, is not analogous to the buttons of a VCR. Each PACE message is comprised

⁵ Mantissa argues that the opposite conclusion – that the PACE language at issue is a method of operation -- is to be drawn from the fact that there were a number of ways to write the source code for the sorter system. Doc. No. 64 at 14-15. The Court rejects this argument. Mantissa cites ILOG, Inc. v. Bell Logic, LLC, 181 F. Supp. 2d 3, 14 (D. Mass. 2002) in which the court concluded that the pop-up menus, text editors, and “context-sensitive program suggestions” allegedly copied by ILOG were “expressions of methods of operation.” Id. The court reasoned that there were many ways of writing source code to achieve those functions. Id. Absent from ILOG, however, was any allegation by Bell Logic that ILOG copied specific elements of the source code enabling the disputed functionality. Moreover, nearly any source code could be written in a variety of ways to accomplish the same result. That fact alone does not transform elements of the source code itself into a method of operation.

of 128 characters or numbers that are indecipherable to the reader without a guide to the field names and a translation of the action codes. A PACE message is a far cry from the words “play” or “record” found on the face of a VCR or, to update the example, a Digital Video Recorder (“DVR”). Instead, the PACE message language is more fittingly compared to the signals emitted by a DVR to facilitate playing a recorded television program or to begin a future recording when a user selects “play” or “record” on his or her remote control.

Mantissa further argues that “[f]orcing someone who is familiar with one set of messages to change to a new set of messages is exactly the situation that the Lotus Court found to be ‘absurd.’” Doc. No. 64 at 15. This argument derives from the Court’s reasoning that it would be “absurd” to require a user to learn how to perform the same operation in a different way for each computer program he or she used. Lotus, 49 F.3d at 817-18. The PACE messaging language, however, enables communication between a customer’s WCS and Mantissa’s tilt tray sorter system; in contrast to Lotus, no human user is involved. Any individuals who might be required to understand the messages transmitted among the computers executing the sortation process would need to learn a new messaging language, but they cannot be characterized as users in the way contemplated by the Lotus Court when describing users of Borland’s allegedly infringing spreadsheet programs. Moreover, some degree of additional learning is necessitated simply by changing the computer language of the software controlling the sorters, as Mantissa did when it implemented Destination.

Mantissa advances the related argument that if it had changed the messaging language, PACE and Destination would not have been backwards compatible. Doc. No. 93 ¶ 19. In other words, a customer’s WCS would have to be re-programmed to communicate with Destination if Destination’s messaging format differed from that of PACE. Id.; see Doc. No. 67-2 ¶ 18. This

interoperability argument misses the mark. Copyrightability turns on the choices made by McEnroe in programming PACE, not on Mantissa's efforts to achieve compatibility with PACE. Oracle, 750 F.3d at 1370-71. Mantissa's goal of making the Mantissa software compatible with PACE may be relevant to Mantissa's affirmative defense of fair use, but neither party has moved for summary judgment on that defense. See 17 U.S.C. § 107 (defining "fair use" as use "for purposes such as criticism, comment, news reporting, teaching . . . , scholarship, or research").

The Court concludes that the PACE messaging language is not a method of operation and, thus, is eligible for copyright protection. Accordingly, the next question is whether the specific elements of PACE allegedly copied by Mantissa were protected by copyright.

E. Copyright Protection of PACE Messages

Having concluded that the PACE messages are not a method of operation, the Court may proceed to assessing the copyright protection afforded to the individual elements of a PACE message. See Lotus, 49 F.3d at 815 (stating that "[t]he initial inquiry should not be whether individual components of a menu command hierarchy are expressive, but rather whether the menu command hierarchy as a whole can be copyrighted"). McEnroe appears to claim copyright to five PACE elements that also appear in the Mantissa software: the "0128" character string at the beginning of each message corresponding to the message length; the field names and the order in which they appear in a PACE message; the message length of 128 bytes; the action codes; and the term "PACE deadman pulses" and the operation it describes. Doc No. 93 ¶¶ 13-18, 20. For the reasons discussed below, the Court holds that the "0128" character string, the field names, and the message length are not copyrightable. However, the order of the field names and the action codes are entitled to copyright protection. Finally, the "PACE deadman pulses" is an uncopyrightable idea.

McEnroe asserts that the Mantissa software both literally and nonliterally infringed McEnroe's copyright to PACE. Computer programs may be subject to literal copying, meaning the alleged infringer copied the source code of the allegedly infringed program, or to nonliteral copying, "which is copying that is paraphrased or loosely paraphrased rather than word for word." Lotus, 49 F.3d at 814; see Oracle, 750 F.3d at 1356. To determine whether nonliteral copying has occurred, the First Circuit indicated in Lotus that application of the abstraction-filtration-comparison test set forth in Computer Assocs. Int'l, Inc. v. Altai, Inc., 982 F.2d 693 (2d Cir. 1992), is appropriate. Lotus, 49 F.3d at 815 (stating that "the Altai test may provide a useful framework for assessing the alleged nonliteral copying of computer code," but finding the test unhelpful in determining whether the literal copying of the menu command hierarchy was copyright infringement).

The Altai test involves three steps to assess substantial similarity between accused and infringed computer programs. First, the abstraction step requires the Court to "dissect the allegedly copied program's structure and isolate each level of abstraction contained within it." Altai, 982 F.2d at 707. The parties and their experts have already performed this step by articulating the specific elements of PACE McEnroe asserts are protectable expression and that have been copied by the Mantissa software. Second, the filtration step "entails examining the structural components at each level of abstraction to determine whether their particular inclusion at that level was 'idea' or dictated by considerations of efficiency . . . ; required by factors external to the program itself; or taken from the public domain and hence is nonprotectable expression." Id. at 707. Finally, once the filtration analysis identifies the "core of protectable expression," the Court "focuses on whether the defendant copied any aspect of this protected expression, as well as an assessment of

the copied portion's relative importance with respect to the plaintiff's overall program." *Id.* at 710. The Court turns first to the filtration inquiry, then discusses the comparison assessment.⁶

1. "0128" prefix to each PACE message

The Court begins its filtration analysis with the "0128" message length prefix that begins each PACE message. Short phrases are not subject to copyright unless they exhibit sufficient creativity. Society of the Holy Transfiguration Monastery, Inc. v. Gregory, 689 F.3d 29, 52 (1st Cir. 2012); see 37 C.F.R. § 202.1(a) (stating that words and short phrases such as familiar symbols are not subject to copyright). Here, the simple combination of four numbers does not exhibit sufficient creativity to warrant copyright protection. The selection of the four digits in question was driven by the message length of 128 bytes. While Mantissa's use of the same four digit prefix

⁶ The Court recognizes that allegations of literal and nonliteral copying can apply to both literal and nonliteral elements of a computer program. The source code, at issue here, is a literal element of a computer program, while the program's sequence, structure, organization and user interface encompass its nonliteral elements. Oracle, 750 F.3d at 1355-56. Both literal and nonliteral elements of a computer program are protected by copyright. eScholar, LLC v. Otis Educ. Sys., Inc., No. 04 Civ. 4051(SCR), 2005 WL 2977569, at * 8 (S.D.N.Y. Nov. 3, 2005). Lotus indicates that the Atlai test is the appropriate test to apply in cases involving nonliteral copying, without regard to what was copied, but Atlai more narrowly dealt with nonliteral copying of nonliteral elements of a computer program, while this case addresses both literal and nonliteral copying of literal elements of PACE. See Atlai, 982 F.2d at 702-03. In other words, the plaintiff in Atlai claimed that the defendant copied a computer program's structure, but not its source code, while McEnroe asserts that Mantissa copied, directly and by way of paraphrasing, PACE's source code. *Id.*

It is unclear whether the Atlai test is applicable to instances of literal copying or to literal elements of computer programs. The parties do not consider this issue. Nonetheless, the Court concludes that any question of the applicability of Atlai is "more of a matter of semantics than substance." Bateman v. Mnemonics, Inc., 79 F.3d 1532, 1545 (11th Cir. 1996). In addressing both literal and nonliteral copying, the Court must consider the copyrightability of particular elements of PACE. Whether that analysis is deemed "filtration" under Atlai or viewed as a separate inquiry, the end result is the same. See id.; see also eScholar, 2005 WL 2977569, at * 22-23 (noting disagreement among circuit courts regarding applicability of Atlai to claims of literal copying but concluding that application of doctrines of copyright law applied at filtration stage is required regardless of Atlai's scope). The question of whether the analysis of claims of literal versus nonliteral copying differs with respect to the "comparison" step of the Atlai test is a topic to which the Court will turn below.

in its messages may be evidence that it copied PACE's source code, any copying cannot be characterized as infringement where the copied element does not display the sufficient modicum of creativity necessary to merit copyright protection.

2. Field names and order

McEnroe argues that the Mantissa software uses the same field names as PACE and strings the fields together in the same order within each message. Neither party analyzes each field name to assess whether it constitutes protectable expression. PACE uses the following field names, in order: msg_len, action_code, msg_id, induct_area, port, barcode, weight, tray, chute, chute_actual, divert_arm, light, button, return_code, filler and rec_id. Doc. No. 67-2 ¶ 33. Some of these field names are similar to those appearing in the Destination program, such as msgLength, actionCode, msgID, inductArea, portIdentifier, barCode, chuteNumber, actualChuteNumber, returnCode and filler40. Id.

The Court concludes that the field names are not copyrightable because of the merger doctrine. "It is accepted that the merger doctrine denies copyright protection when creativity merges with reality; that is, when there is only one way to express a particular idea." Gregory, 689 F.3d at 53 (internal quotation marks and alterations omitted). The rationale for the merger doctrine is that when there is one, or a limited number, of ways to express an idea, "the idea and its expression are inseparable and copyright is no bar to copying that expression." Id. (quoting Yankee Candle Co. v. Bridgewater Candle Co., 259 F.3d 25, 36 (1st Cir. 2001)).

Here, PACE's field names, in many instances, consist of a word or two that succinctly express an idea in a way that is inseparable from the idea. For example, the field names "barcode" and "weight" correspond to the barcode number assigned to an item progressing through the sorter system and its weight. "Action_code" expresses the action code contained in the message and

“chute” connotes the specific chute designated to receive the item. In all these instances, the name of the field is a form of the word (or words) describing the field’s function, and there are only a few ways to designate that function. The expression, therefore, merges with the idea and is not protected by copyright. Baystate Techs., Inc. v. Bentley Sys., Inc., 946 F. Supp. 1079, 1088 (D. Mass. 1996) (applying merger doctrine in concluding that names of files within data structure not protectable, citing example of filename “color” whose function was “to create a color”).

The field name order, however, is a different matter. The field names themselves may be compared to individual words, which are foreclosed from copyright protection. 37 C.F.R. § 202.1(a). When words are arranged in a particular order to form a paragraph, however, the paragraph constitutes a creative expression entitled to copyright protection. See Oracle, 750 F.3d at 1363 (noting that the opening of Charles Dickens’s A Tale of Two Cities is protected by copyright even though it “nothing but a string of short phrases”).

Mantissa argues that the order of the fields in a PACE message “follows the logical arrangement that is commonly used by programmers.” D. 64-3 ¶ 35. Mantissa contends that placing the message length and action code at the beginning of the message “immediately permits verification and identification of the type of message,” and “[t]he remaining fields are placed in the order in which operations occur on the sorter.” Id. Mantissa thus implies that the field name order was dictated by external factors, implicating the *scenes a faire* doctrine. Doc. No. 92 at 7. The *scenes a faire* doctrine bars copyright protection of elements of a computer program that are dictated by external factors, such as compatibility requirements, industry-wide programming practices, and mechanical limitations of the computer on which the program is to be installed. Baystate, 946 F. Supp. at 1088; see Oracle, 750 F.3d at 1363.

Just because the field names are arranged logically according to the sortation process, however, does not mean that their order was dictated by external factors or mandated by programming practice. The field names could have been arranged in any order, and the messages to the sorter system would still enable it to function. See Doc. Nos. 75 ¶ 37, 67-2 ¶ 35. Just as the words and sentences in a paragraph might describe a process according to the logical order of the steps involved in the process, the fields in the PACE messages capture a logical sortation process. A logically structured paragraph displays sufficient creativity to garner copyright protection, and the PACE field name order does also.

The Court holds that PACE's field names are not copyrightable, but that the order of the field names is protected by copyright.

3. 128-byte message length

The next element of PACE at issue is the message length of 128 bytes. McEnroe admits that the message length of 128 bytes was "chosen by McEnroe due to computer memory limitations present in the early 1990s." Doc. No. 65 at 20. As explained above, the *scenes a faire* doctrine, applied in the context of computer programs, denies copyright protection to elements of a computer program that are dictated by external factors, such as mechanical limitations of the computers on which the software is designed to operate. Computer memory limitations are the type of external factor encompassed by the *scenes a faire* doctrine. Thus, the 128 byte message length is not protected by copyright.

McEnroe misapplies the *scenes a faire* doctrine, arguing that "[a]ny computer restrictions that may have influenced McEnroe in the early 1990's[] were no longer in existence at the time that the Mantissa Software was created." Doc. No. 82 at 18. But "the focus of the *scenes a faire* doctrine is on the circumstances presented to the creator, not the copier." Oracle, 750 F.3d at 1364.

The relevant inquiry is whether external factors dictated McEnroe's choices when he created PACE, not whether Mantissa was subject to the same limitations when it created Merlin and Destination. McEnroe admits that limited computer memory prompted him to confine PACE messages to 128 bytes. Dictated by external factors, this choice is not protected by copyright.

4. *Action codes*

Mantissa takes issue with PACE's four-letter action codes, such as SCIN, TIPR, TIPV, LITE and CHTO, asserting that they are not copyrightable under the merger doctrine. Doc. No. 64 at 18. Just as the word "color" merged with the function of the file to create a color in Baystate, 946 F. Supp. at 1088, Mantissa argues that the action codes that control tipping, TIPV and TIPR, merge idea with expression. Similarly, according to Mantissa, "the idea of refreshing a light merges with the name LITE, the idea of entering information from a scanner merges with the name SCIN, and the idea of a chute being opened merges with the name CHTO." Doc. No. 64 at 19.

The Court disagrees. While PACE's field names capture one of a limited number of ways to express the idea of, for example, "weight," "barcode," and "chute," the four-letter action codes are not the only way, or even one of a few ways, to express the action being represented. For example, one reading the action code "SCIN" does not necessarily associate that abbreviation with the idea of a scanner, let alone the notion of entering information from a scanner. Likewise, the action code "CHTO" does not clearly refer to idea of a chute opening in the way that the filename "color" referred to the idea of color in Baystate or the PACE field name "barcode" refers to the idea of an item's barcode. McEnroe exhibited a measure of creativity in reducing each action to a four-letter code that does not clearly indicate the function of the code. PACE's action codes are, therefore, protected by copyright.

5. *PACE deadman pulses*

McEnroe's expert notes that one of the similarities between PACE and the Mantissa software is Mantissa's use of a flowchart entitled "PACE deadman pulses." Doc. No. 67-1 ¶ 82. The expert opines that the name of the flowchart indicates that Mantissa's software developers referenced PACE in developing their programs. Id. Assuming that is true, McEnroe does not point to any source code or element of PACE resembling the disputed flowchart, nor does he advance any argument as to why Mantissa's reference constitutes copyright infringement. In addition, as Mantissa explains, the deadman pulses are a failsafe mechanism to prevent an accident, much like a "deadman switch" prevents a runaway train should the train's engineer be incapacitated. Doc. No. 64 at 19. The concept of a failsafe mechanism is an idea, not a copyrightable expression. The Court concludes the term "PACE deadman pulses" is not protected by copyright.

F. Substantial Similarity

The final step in the infringement analysis is whether the protected elements of the allegedly infringed work and the accused work are substantially similar. Lotus, 49 F.3d at 813; see Feist, 499 U.S. at 361. Altai instructs that this inquiry, as it pertains to nonliteral program components, "focuses on whether the defendant copied any aspect of th[e] protected expression, as well as an assessment of the copied portion's relative importance with respect to the plaintiff's overall program." 982 F.2d at 710.

Assuming that this formulation of the substantial similarity analysis applies in this context, see supra n.6, Mantissa argues that McEnroe's expert identified only about two out of 408 pages of PACE source code as similar to the Mantissa software, or 0.5 percent of the PACE program. Doc. No. 64 at 21. In addition, Mantissa contends that the action codes and message formats are

insignificant aspects of PACE. Id. McEnroe counters that the PACE elements at issue are essential to the efficient and rapid functioning of the sorter system. Doc. No. 82 at 21. The limited number of lines of source code involved does not bear on how critical that code is, according to McEnroe. Id. at 22.

Similar arguments apply even if the claims at bar are not governed by Atlai. Substantial similarity exists, with respect to claims of literal copying, “if a reasonable, ordinary observer, upon examination of the two works, would conclude that the defendant unlawfully appropriated the plaintiff’s protectable expression.” Situation Mgmt. Sys., Inc. v. ASP. Consulting, 560 F.3d 53, 58 (1st Cir. 2009) (internal quotation marks omitted). *De minimus* copying, argued by Mantissa, does not preclude a finding of substantial similarity. “That the copying involved only a small portion of the plaintiff’s work does not by itself make the copying permissible. Indeed, ‘even if the similar material is quantitatively small, if it is qualitatively important, the trier of fact may properly find substantial similarity.’” Id. at 59 (quoting 2 Nimmer & Nimmer, Nimmer on Copyright, § 13.03[A][2][a], at 13-55 (2008)).

The issue of substantial similarity presents a factual issue to be resolved by a jury. “Because substantial similarity is customarily an extremely close question of fact, summary judgment has traditionally been frowned upon in copyright litigation.” Business Mgmt. Int’l, Inc. v. Labyrinth Bus. Solutions, LLC, No. 05 Civ. 6738(MHD), 2009 WL 790048, at * 16 (S.D.N.Y. Mar. 24, 2009) (quoting Hoehling v. Universal City Studios, Inc., 618 F.2d 972, 977 (2d Cir. 1980)). On this disputed point and construing the record evidence in McEnroe’s favor, the Court cannot conclude whether there was or was not substantial similarity between PACE and the Mantissa software. The jury may weigh the amount of overlap between the protected PACE

elements and the Mantissa software against the relative importance of the similar portions.⁷ In addition, the issue of the content of the claimed copyright, *supra* sections III.B & III.C, must be resolved prior to undertaking a substantial similarity comparison.

IV. CONCLUSION

For the foregoing reasons, the Court **ALLOWS IN PART** and **DENIES IN PART** Mantissa's motion for summary judgment, Doc. No. 62. The motion is **ALLOWED** to the extent that the Court concludes that three PACE elements are not protected by copyright: the PACE field names, the 128-byte message length, and the "0128" prefix to each PACE message. The remainder of Mantissa's motion is **DENIED**. McEnroe's motion for summary judgment, Doc. No. 56, is **DENIED**. The Court will hold an initial pretrial conference on Thursday, March 10, at 3:00 PM.

So Ordered.

/s/ Leo T. Sorokin
United States District Judge

⁷ Mantissa briefly argues that it obtained an implied license to use the PACE message language. Doc. No. 74 at 19-21. This argument depends on an exclusive license obtained by Penguin, operated by Bob Lavin ("Lavin"), who designed and helped develop the Merlin software. *Id.* at 20. The Court rejects this argument. The license agreement between McEnroe's company and Penguin specifically prohibited any assignment, transfer or relicense of the license to PACE. Doc. No. 89 at 11; Doc. No. 90-1 ¶ 15. Lavin, therefore, did not have any authority to grant a license to Mantissa.